

AMENDMENTS

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Please amend the claims as follows:

1. (currently amended) A sonic transducer comprising:
elements of transducer material, the elements separated by kerfs;
a first layer of material on a first side of the transducer material, the first layer free of
through kerfs and supporting the elements; and

~~In~~ an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane, the matching layer on a second side of the transducer material, the second side opposite the first side and closer to a lens or patient than the first side, the matching layer further comprising:
~~on a sonic transducer, an improvement comprising:~~

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer; and

a metal layer on each of the top and bottom surfaces;

wherein the matching layer has an acoustic impedance between acoustic impedances of the transducer material and a patient.

2. (currently amended) The ~~transducer improvement~~ of Claim 1 wherein the conductor is aligned perpendicular to the top and bottom surfaces.

3. (currently amended) A sonic transducer comprising:
elements of transducer material, the elements separated by kerfs;
a first layer of material on a first side of the transducer material, the first layer free of
through kerfs and supporting the elements; and

~~In~~ an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation, the matching layer on a second side of the transducer material, the second side opposite the first side and closer to a lens or patient than the first side, the matching layer further comprising: ~~on a sonic transducer, an improvement comprising:~~

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer;

wherein the matching layer corresponds to an element or sub-element of the transducer, the conductor and at least one additional conductor aligned between the top and bottom surfaces within the element or sub-element, the element or sub-element separated from other elements or sub-elements by kerfs;

wherein the matching layer has an acoustic impedance between acoustic impedances of the transducer material and a patient.

4. (currently amended) The transducer improvement of Claim 1 wherein the matching layer corresponds to an element of the transducer, the conductor positioned closer to an edge of the element than a center of the element along the elevation and azimuth plane of the bottom surface.

5. (currently amended) A sonic transducer comprising:

elements of transducer material, the elements separated by kerfs;

a first layer of material on a first side of the transducer material, the first layer free of through kerfs and supporting the elements; and

In an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane, the matching layer on a second side of the transducer material, the second side opposite the first side and closer to a lens or patient than the first side, the matching layer further comprising:
~~on a sonic transducer, an improvement comprising:~~

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer;

wherein the matching layer comprises castable material;

wherein the matching layer has an acoustic impedance between acoustic impedances of the transducer material and a patient

6. (currently amended) The transducer improvement of Claim 5 wherein the castable material comprises a polymer.

7. (currently amended) A sonic transducer comprising:
elements of transducer material, the elements separated by kerfs;
a first layer of material on a first side of the transducer material, the first layer free of
through kerfs and supporting the elements; and

~~In~~ an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane, the matching layer on a second side of the transducer material, the second side opposite the first side and closer to a lens or patient than the first side, the matching layer further comprising:
~~on a sonic transducer, an improvement comprising:~~

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer;

wherein the conductor comprises a conductor material in a via extending from the top surface to the bottom surface, the via having less lateral extent in the azimuth and elevation plane than the top and bottom surfaces;

wherein the matching layer has an acoustic impedance between acoustic impedances of the transducer material and a patient.

8. (currently amended) The transducer improvement of Claim 7 wherein the conductor material is a metal plating.

9. (currently amended) A sonic transducer comprising:
elements of transducer material, the elements separated by kerfs;
a first layer of material on a first side of the transducer material, the first layer free of
through kerfs and supporting the elements; and

~~In~~ an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane, the matching layer on a second side of the transducer material, the second side opposite the first

side and closer to a lens or patient than the first side, the matching layer further comprising:
~~on a sonic transducer, an improvement comprising:~~

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer;

wherein the conductor comprises conductive film extending from the top surface to the bottom surface at least partly within the layer, the film less than 10 microns thick;

wherein the matching layer has an acoustic impedance between acoustic impedances of the transducer material and a patient.

10. (currently amended) The transducer improvement of Claim 9 wherein the conductive film comprises sputtered conductive material.

11. (currently amended) The transducer improvement of Claim 9 wherein the conductor comprises a plurality of enclosed shapes in cross section viewed perpendicular to the azimuth and elevation plane of the top surface.

12. (currently amended) The transducer improvement of Claim 9 wherein the matching layer comprises a solid matching layer material, the conductor positioned between separate volumes of the solid matching layer material.

13. (previously presented) A sonic transducer comprising:
elements of transducer material, the elements separated by kerfs;
a first layer of material on a first side of the transducer material, the first layer free of through kerfs and supporting the elements; and

In an electrically conductive acoustic matching layer having top and bottom surfaces, each of the top and bottom surfaces substantially in an azimuth and elevation plane, the matching layer on a second side of the transducer material, the second side opposite the first side and closer to a lens or patient than the first side, the matching layer further comprising:
~~on a sonic transducer, an improvement comprising:~~

a conductor aligned relative to the top and bottom surfaces at least partly within the matching layer;

wherein the conductor comprises magnetic particles aligned such that the longest dimension of the magnetic particles is more along a dimension perpendicular than parallel to the top and bottom surfaces;

wherein the matching layer has an acoustic impedance between acoustic impedances of the transducer material and a patient.

14. (currently amended) The transducer ~~improvement~~ of Claim 13 wherein the magnetic particles comprise a soft magnetic powder.

15-36. (cancelled)

37. (currently amended) The transducer ~~improvement~~ of Claim 1 wherein the matching layer and an additional conductive matching layer are on a same side of the transducer.